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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,601	03/27/2007	Michiya Nakashima	80368(47762)	6466
21874 7590 02/11/2009 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205				
EXAMINER				
NGUYEN, VU ANH				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
02/11/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/561,601

**Applicant(s)**

NAKASHIMA ET AL.

**Examiner**

Vu Nguyen

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/20/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 12/20/2005, 07/17/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Preliminary Amendment*

In this Office action, the set of claims presented in the preliminary amendment filed 02/06/2006 will be examined. Claims 8-16 are pending in this application.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Idemura et al. (US 6,063,862).

3. Corresponding to the limitations set forth in these claims, Idemura et al. (Idemura, hereafter) teaches a method for producing a glass-polyamide composite, said method comprising an inter-phase polycondensation reaction between (1) a dicarboxylic acid halide dissolved in an organic solvent and (2) a diamine dissolved in water glass (Abstract); wherein (A) the organic solvent includes water-insoluble and water-soluble solvents (col. 4, lines 34-44), (B) the reaction occurs at the interface (col. 4, lines 34-44), (C) the composite contains 5-68 wt% of the SiO<sub>2</sub> glass, which has an average particle size of 8-160 nm and which is uniformly distributed in the composite (col. 2, lines 42-45), and (D) the reaction is done at room temperature (col. 9, line 19; col. 10,

line 23). In one embodiment, the glass particle has an average size of 10 nm (col. 9, line 66). The water glass is composed of an alkali metal, silicon, and oxygen and represented by  $M_2O \cdot nSiO_2$  (col. 4, lines 1-2). It is noted that silicon is a group-14 metal element. Since the water glass, such as sodium silicate (Examples), is highly basic with pH of about 12-13.6, the aqueous medium is inherently more basic than the organic diamine.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Idemura et al. (US 6,063,862) in view of Enomoto et al. (US 5,880,201).

7. Regarding the limitations set forth in this claim, the method of claim 15 has been shown to be anticipated by Idemura as discussed above. However, Idemura fails to teach aluminum oxide.

8. Enomoto et al. (Enomoto, hereafter) teaches a thermoplastic resin film **having excellent slipperiness, wear resistance and transparency**, wherein the film contains 0.005-20 wt% of fine particles of composite oxide comprising silica and an inorganic oxide other than silica (Abstract). The latter preferably includes aluminum oxide (Tables 1 & 2), where the precursor of which includes sodium aluminate (col. 6, lines 3-13; Examples 1 & 4). The precursor of the silica includes potassium silicate and sodium silicate (Examples). The thermoplastic resin includes polyester and polyamide (col. 2, lines 54-65). The preferred method of dispersing the composite metal oxide particles in the thermoplastic resin is to incorporate them during the polymerization (col. 7, lines 54-67. See also Example 7 and Embodiment 7). Numerous applications are suggested for the disclosed film (col. 8-9, bridging paragraph).

9. In light of such teachings, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the method taught by Idemura by incorporating the non-silicon metal oxide species, such as aluminum oxide, taught by Enomoto in the composite so as to enhance such properties as slipperiness, wear resistance and transparency to the composite, which is then suitable for a wide range of industrial applications.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 7:30-5:00 (Alternating Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vu Nguyen  
Examiner  
Art Unit 1796

/David Wu/  
Supervisory Patent Examiner, Art Unit 1796